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ARCUS AORTA ANOMALIES

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ABSTRACT

Double arcus aorta anomalies, which constitute 1-2% of congenital heart diseases, are among the most important factors causing airway obstructions in newborns; and the severity of clinical findings vary according to the degree of compression. Here, we will report cases with similar symptoms in 3 different nursling groups in our clinic.

KEYWORDS: Double aortic, vascular ring, nursling.

INTRODUCTION

Vascular rings, which are found with less than 1% frequency in congenital cardiovascular anomalies, were identified by Dr. Robert Gross for the first time; and were successfully treated by using double arcus aorta division technique.[1] Double arcus aorta is the most common anomaly among vascular ring pathologies.[2]

This pathology, which accounts for 1-2% of congenital heart diseases, is among the most important factors causing airway obstructions in newborns; and the severity of clinical findings vary according to the degree of compression.[3] Double arcus aorta can surround the trachea and esophagus, and cause pressure and significant obstruction. If the pressure is severe, symptoms begin after birth. However, some cases with partial pressure may be asymptomatic throughout their lives.[4] Natural progression of the anomaly is quite different in adults compared to the pediatric age group.[5] The most common symptoms are wheezing, rustling, and difficulty while breathing.[4]

Here we are reporting cases with similar symptoms in 3 different age groups in our clinic.

CASE 1: 85-day-old male patient. Normal birth on due date. Aneurysmatic expansion and tortuous structure were detected in left ventricular dilated arcus aorta in echocardiography. As a result of angiography, obstruction at transvers arc level in aneurysmatic ascending aorta tortuous structure, left common carotid artery originating from ascending aorta . Left subclavian artery was evaluated to be obstructive. When the patient was opened with median sternotomy procedure, it was seen that left carotid artery originated from ascending aorta, and proceeded through the anterior of the trachea. Coarctate segment was expanded with biologic patch under cardiopulmonary bypass (Figure 1). The patient was discharged with complete recovery.

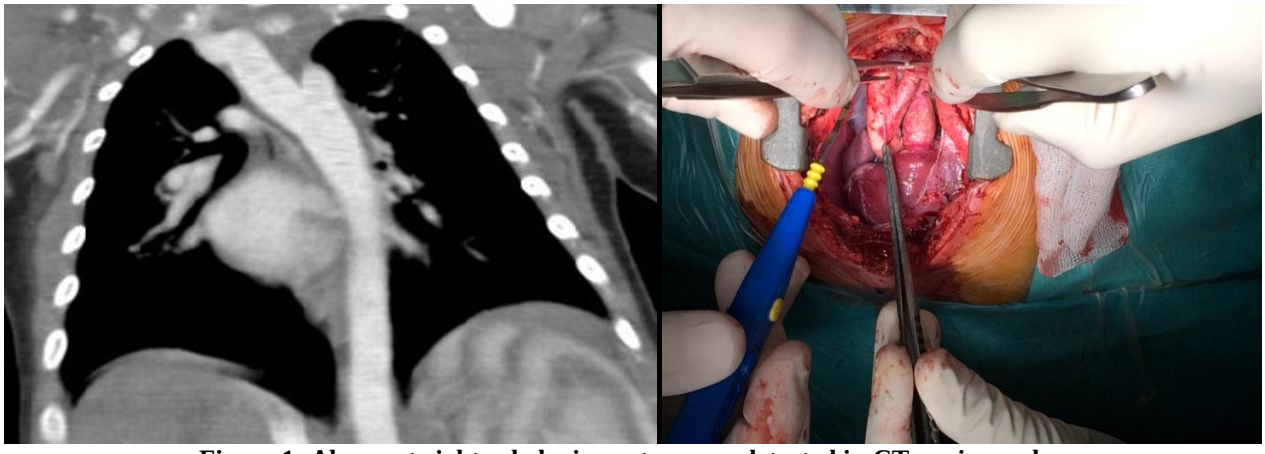

Figure 1: Aberrant right subclavian artery was detected in CT angiography.

CASE 2: 180-day-old male patient. Normal birth on due date. The patient, who was opened with left thoracotomy protocol, had Kommerell Diverticulum. PDA, which proceeded from the anterior of the trachea, was found, turned and ligatured. Patient was discharged with complete recovery on post-operative day 4.

CASE 3: 6 mounth-old patient. Aberrant right subclavian artery was detected in CT angiography.The patient was opened with left thoracotomy procedure. Coarctate aortic segment and aberrant right subclavian artery on the proximal of the coarctate segment were detected. The coarctate segment was excised, and proximal and distal aorta was anostomozed end-to-end. Patient was discharged with complete recovery on post operative day 7.

MATERIAL AND METHOD

In vascular ring cases, the most commonly used classical diagnosis method is esophagogram with barium. Echocardiography is performed to define additional intracardiac anomalies and vascular anatomy; however, its diagnostic value is very little.[5] Although the diagnosis of vascular ring and aortic arc anomalies was made with pulmonary x-ray and barium esophagogram in the past, additional echocardiography and angiography had diagnostic value; the gold standard is noninvasive examination MR angiography in diagnosis. We used angiography for diagnostic purposes in our cases. Surgical treatment is the only option in symptomatic cases. Although the frequent approach includes the release of the esophagus and trachea with left posterior thoracotomy in right decubitus position in surgical treatment, we preferred surgical correction with median sternotomy in our cases.

DISCUSSION

Aortic arc anomalies usually occur with compression symptoms during nursling period.[6] The most common pathology of vascular ring anomalies, which are examined in 2 groups as complete and incomplete, is double arcus aorta vascular ring pathology. The most common symptoms are wheezing, rustling, and difficulty during breathing.[4] Chronic wheezing symptoms increase when the neck flexion. Our patients admitted to us with complaints of wheezing and frequent pneumonia. Case 2 had dysphagia symptoms, and growth developmental retardation secondary to it.

RESULT

It is useful to bring to mind aortic arc anomalies in patients with growth and developmental retardation, recurrent distress in breathing, stridor, wheezing, cough, apnea, dysphagia and excessive vomiting whose reason cannot be explained. The clearest treatment protocol for aortic arc anomalies determined with diagnostic tests is the surgical option. Normal vital functions can be performed with asymptomatic progression in these patients mostly in the post operative period.

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